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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

Riazi 8-20-7

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Application Number

10/763,595

Filed

January 23, 2004

First Named Inventor

Riazi et al.

Art Unit

2616

Examiner

Duc T. Duong

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request

This request is being filed with a notice of appeal

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

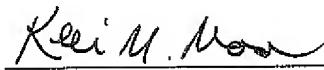
I am the

☐ applicant/inventor

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record
Registration number **36,597**

☐ attorney or agent acting under 37 CFR 1.34
Registration number if acting under 37 CFR 1.34 _____



Signature

Kevin M. Mason

Typed or printed name

203-255-6560

Telephone number

July 18, 2007

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

5 Applicant(s): Riazi et al.
Docket No : 8-20-7
Serial No.: 10/763,595
Filing Date: January 23, 2004
Group: 2616
10 Examiner: Duc T Duong

Title: Method and Apparatus for Identifying an Orthogonal Frequency Division
Multiplexing (OFDM) Terrestrial Repeater Using Inactive Sub-Carriers

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**MEMORANDUM IN SUPPORT OF
PRE-APPEAL BRIEF REQUEST FOR REVIEW**

In response to the non-final Office Action dated April 18, 2007, Applicants
20 submit the following remarks. The present invention and prior art have been summarized in
Applicants' prior responses.

STATEMENT OF GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The present application was filed on January 23, 2004 with claims 1 through 30.
Claims 1 through 30 are presently pending in the above-identified patent application. Claims 1,
25 2, 6-10, 14-18, 21-25, and 28-30 were rejected under 35 U.S.C. §112, first paragraph, as failing
to comply with the written description requirement, and under 35 U.S.C. §102(e) as being
anticipated by Schafer et al. (United States Patent Number 6,134,267). The Examiner indicated
that claims 3-5, 11-13, 19, 20, 26, and 27 would be allowable if rewritten in independent form
including all of the limitations of the base claims and any intervening claims.

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ARGUMENTS

Section 112 Rejections

Claims 1, 2, 6-10, 14-18, 21-25, and 28-30 are rejected under 35 U.S.C. §112,
first paragraph, as failing to comply with the written description requirement. Regarding
35 independent claims 1, 9, 17, and 24, the Examiner asserts that there does not appear to be a

written description of the claimed limitation “a first subset of said plurality of sub-carriers are allocated pursuant to a standard...and a second subset of said plurality of sub-carriers are allocated pursuant to said standard as inactive subcarriers that do not carry information.”

Applicants note that the utilization of standards for OFDM systems was initially
5 discussed in the Background section of the present disclosure, where Applicants presented the European digital broadcasting standard as an example of a system that broadcasts a TII signal. A person of ordinary skill in the art would recognize that such standards *specify the use of one or more sub-carriers for the transmission of information and specify one or more (inactive) sub-carriers that do not carry information*. In the Background section, Applicants also pointed out
10 several deficiencies of such standards (page 2, lines 5-15, of the originally filed disclosure) that are addressed by various aspects of the present invention, and presented several embodiments that are compatible with such standards (pages 4-12). In light of these teachings, a person of ordinary skill in the art would recognize that the claimed invention may be implemented in the context of such standards. In addition, since the teachings and embodiments disclosed in the
15 present specification are compatible with such standard systems, a person of ordinary skill in the art would be enabled to implement the claimed invention utilizing the present disclosure and such standards.

In the Advisory Action dated January 11, 2007, the Examiner asserted that the background section does not enable one of ordinary skill in the art to derive such claimed
20 limitations, and that every claimed limitation is supposed to be disclosed in the detailed section of the disclosure. The Examiner further asserts that the previous claim amendment therefore has added new matter.

Applicants note that the background section of the application defines the context of the present invention and thereby contributes to the enablement of the invention. In this
25 situation, the claimed limitations are, in any case, disclosed in the detailed section of the disclosure (see, pages 2-6 of the originally filed specification). The background section was merely referenced for a definition of a term (“pursuant to a standard for transmission of information”) that is recited in the claims. Contrary to the Examiner’s assertion, the claim

amendment does not add new matter to the disclosure.

Independent Claims 1, 9, 17 and 24

Independent Claims 1, 9, 17, and 24 are rejected under 35 U.S.C. §102(e) as being anticipated by Schafer et al. Regarding transmitter claims 1 and 9, for example, the Examiner
5 asserts that Schafer teaches “means 8 for inserting an identifying signal TII on inactive sub-carriers (col 1, lines 31-35; the TII signal is inserted in a null symbol (inactive sub-carriers)).”

The present invention is directed to techniques for transmitting an identifying signal in an orthogonal frequency division multiplexing system. Each independent claim generally requires transmitting, receiving, or inserting an “identifying signal on one or more of
10 said inactive sub-carriers for at least a portion of time, wherein the identifying signal identifies a transmitter.”

Applicants note that Schafer teaches that the “method to detect transmitter identification information in a DAB stream according to the present invention comprises the following steps: a) differential demodulation of TII pairs included in the spectrum of every
15 second *null symbol* of the incoming DAB stream to respectively obtain a demodulated null symbol spectrum” (Col 2, lines 35-41; emphasis added)

In one preferred embodiment, the present invention makes use of inactive sub-carriers at the edges of the information carrying sub-carrier groups to transmit the TII. When discussing “sub-carriers,” it is clearly in the frequency domain. Thus, the exemplary
20 embodiment of the present invention can be viewed as transmitting TTAAAAAAAAATT, where frequency is along the horizontal axis, A corresponds to the active (information carrying) sub-carriers, and T is the TII carrying sub-carriers that were previously inactive and now have been activated in accordance with the present invention. In the time domain, the sequence would be: TTAAAAAAAAATT in the first time slot, TTAAAAAAAAATT in the second time slot, and
25 TTAAAAAAAAATT in the third time slot. Thus, in each time interval, the inactive sub-carriers at the edges (i.e., first two and last two sub-carriers) carry the TII identifier.

The transmission in the frequency domain over time, according to the cited ETS standard, on the other hand, can be viewed as transmitting AAAAAAAAAA at time 1;

000000000000 at time 2; and AAAAAAAAAA at time 3. Thus, the second time interval constitutes a null symbol. This is the sequence of symbols (in time) with each symbol written out as frequency content. Schafer proposes to insert TII pairs in the spectrum of every second null symbol. Thus, the frequency domain over time, according to Schafer, can be viewed as transmitting AAAAAAAAAA at time 1; 0000000TT00000000 at time 2; and AAAAAAAAAA at time 3. Thus, Schafer takes the null symbols (i.e., where all sub-carriers were muted according to the ETS standard) and then inserts the TII on one or more of the **active** sub-carriers. The sub-carriers that carry the TII for the null symbol carry data in other time intervals.

As set forth in the present specification, at page 3, line 9, inactive sub-carriers are the “**unused**” sub-carriers, as would be apparent to a person of ordinary skill in the art.

Please note that the independent claims require transforming said modulated signal to create an OFDM signal having a plurality of sub-carriers *wherein a first subset of said plurality of sub-carriers are allocated pursuant to a standard for transmission of information and a second subset of said plurality of sub-carriers are allocated pursuant to said standard as inactive subcarriers that do not carry information*; and transmitting, receiving or inserting said identifying signal on one or more of said inactive sub-carriers for at least a portion of time. The transmission of a TII during a null symbol does not infer that the transmission of the symbol is performed utilizing inactive sub-carriers, as would be apparent to a person of ordinary skill in the art. In fact, the sub-carriers in Schafer that carry the TII during the null symbol carry data in other time intervals.

Thus, Schafer et al. do not disclose or suggest transforming said modulated signal to create an OFDM signal having a plurality of sub-carriers wherein a first subset of said plurality of sub-carriers are allocated pursuant to a standard for transmission of information and a second subset of said plurality of sub-carriers are allocated pursuant to said standard as inactive subcarriers that do not carry information; and transmitting, receiving or inserting said identifying signal on one or more of said inactive sub-carriers for at least a portion of time, as required by independent claims 1 and 9, and do not disclose or suggest transforming said received signal to recover an OFDM signal in the frequency domain having a plurality of sub-

carriers wherein a first subset of said plurality of sub-carriers are allocated pursuant to a standard for transmission of information and a second subset of said plurality of sub-carriers are allocated pursuant to said standard as inactive subcarriers that do not carry information; decoding said OFDM signal; and processing said identifying signal received on one or more of said inactive sub-carriers for at least a portion of time, wherein said identifying signal identifies a transmitter, as required by independent claims 17 and 24

Dependent Claims 2-8, 10-16, 18-23 and 25-30

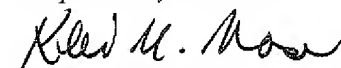
Claims 2-8, 10-16, 18-23, and 25-30 are dependent on claims 1, 9, 17, and 24, respectively, and are therefore patentably distinguished over Schafer et al because of their dependency from independent claims 1, 9, 17, and 24 for the reasons set forth above, as well as other elements these claims add in combination to their base claim. The Examiner has already indicated that claims 3-5, 11-13, 19, 20, 26, and 27 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

All of the pending claims, i.e., claims 1 through 30, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below

The Examiner's attention to this matter is appreciated

Respectfully submitted,



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Date: July 18, 2007